

## BREEDON Onecoat Utilities IS A SINGLE LAYER MODIFIED ASPHALT CONCRETE SURFACING SOLUTION WITH GREATER WORKABILITY AND DURABILITY THAN STANDARD PRODUCTS.

### APPLICATIONS

- Trench reinstatements
- Patching
- Repairs

### OVERVIEW

Reinstatement of trenches following utility works is problematic with 'standard' bituminous materials. Adequate compaction is difficult to achieve due to the narrow nature of the works and rapid workability loss of the product, often leading to high in situ air voids, poor performance and premature failure. Normal reinstatements involve laying a base course and/or a binder course followed by a surface course. BREEDON Onecoat Utilities has been specifically designed for this application to resolve the issues and provide a long-lasting durable surfacing. Based on EME (Enrobé à Module Élevé) design, BREEDON Onecoat Utilities is a single layer modified asphalt concrete surfacing solution with greater workability and durability than standard products. Installing in one layer enables better heat retention and compactability, whilst also significantly reducing construction time.

### TECHNICAL DATA

BREEDON Onecoat Utilities is a 10mm EME2 based proprietary surfacing utilising a modified binder in order to improve workability and compactability, significantly improving durability when compared against the traditional products used in two layer



installations. A single layer application also reduces the risk of delamination and potholing by eliminating the possibility of trapping moisture and/or detritus which may occur with a two course treatment. Improved durability substantially reduces maintenance costs offering whole-life cost savings.

To assess stiffness (strength) and resistance to permanent deformation, a comparative study was conducted between BREEDON Onecoat Utilities (installed at layer thicknesses of 40 to 100mm) and traditional two-layer construction tested together (30mm layer of AC 6 dense surf 100/150 and 50mm of AC 20 dense bin 100/150). The results can be summarised as follows:

Test Method	AC 6 dense surf 100/150 and AC 20 dense bin 100/150	BREEDON Onecoat Utilities
Resistance to Permanent Deformation (BS EN 12697-22 in air at 60°C)	All specimens exceeded 20mm rut depth	Mean wheel track slope of 0.2mm/1,000 cycles
Indirect Tensile Stiffness Modulus (BS EN 12697-26: Annex C)	Mean value = 859 MPa	Mean value = 2321 MPa
Water Sensitivity (BS EN 12697-12)	Not determined	Indirect Tensile Strength Ratio (ITSR) ≥70%

The test results confirm BREEDON Onecoat Utilities as a stronger, more robust, rut resistant material when compared to a dual layer installation. An Indirect Tensile Strength Ratio (ITSR) of ≥70% confirms strength retention and durability after water saturation and conditioning.

### CONSTRUCTION

BREEDON Onecoat Utilities is available in one size, and the nominal and minimum compacted layer thicknesses and typical initial macrotexture depths are as follows:

Largest Nominal Aggregate Size (mm)	Nominal Layer Thickness (mm)	Minimum Thickness at Any Point (mm)	Typical Initial Texture Depth (mm)
10	50 - 100	40	≥0.8

New constructions require good quality, non-plastic, well compacted sub-base (i.e. Type 1). If installed onto bituminous materials or concrete, tack or bond coat should be applied and allowed to fully 'break' (i.e. turn from brown to black). Installation should be carried out in accordance with the general requirements of BS 594987, using as large a tandem roller as possible for the site. Pedestrian single-drum rollers and wacker plates should only be used when necessary, and to remove any marks left by the lead roller. The material shall be substantially compacted before reaching 120°C.

### BENEFITS

- Time and cost saving single course application.
- Less disruption to the public.
- Improved workability and compactability allowing multiple site visits.
- Less risk of delamination and pot holing compared to a two layer installation.
- Single layer improves heat retention, increasing the compaction period,

- helping to lower in situ air voids and achieve impermeability.
- Higher strength, durability and rut resistance when compared with traditional dual layer installations.
- Very good climate (water and ageing) resistance.
- Good rate of spread.
- Smooth, uniform finish.
- Minimal maintenance required.

- Area can be opened to traffic once the centre of the layer has reached  $\leq 40^{\circ}\text{C}$ .
- Available as a coloured product.

#### MAINTENANCE AND REPAIR

BREEDON Onecoat Utilities is not subject to any specialised routine maintenance processes, although the following procedures should be followed:

- If used for vehicle parking, the vehicles shall be moving when the wheels are turned and shall be parked in different positions.
- Any heavy vehicles, trailers, caravans and ladders with small footprints parked on the material should use wooden boards to disperse the loading.
- Fuel spillages should be removed immediately (sand, sorbents such as cat litter, oil absorbent pads and spill kits can be useful for this task).
- Any loose aggregate particles should be brushed and removed from the surface to prevent abrasion.

#### Major repairs

If possible, any damaged areas are to be removed by planing to the appropriate depth to provide a minimum length of 15m for paver resurfacing. Alternatively, the section to be replaced can be removed and re-laid by hand. The sections will be resurfaced using material to the same specification.

#### Minor repairs

- Minor repairs can be carried out by cutting out the damaged section and replacing it with a material of suitable specification.
- For trenches, the section of the trench to be replaced shall be removed in its entirety. For larger areas, a diamond patch reinstatement can be used, extending a minimum of 0.25m beyond the damaged section. Alternatively, the section can be completely re-laid.
- Joints must be saw cut vertical, cleaned and painted with a thick uniform coating of hot bitumen, hot elastomeric polymer modified bituminous binder, or cold applied thixotropic bituminous compound prior to laying.

#### WHY CHOOSE BREEDON PROPRIETARY MATERIALS?

The Proprietary Materials offered by Breedon are extensively designed and rigorously tested to exceed the performances of traditionally used asphalts in specific applications. Our Proprietary Materials often include additives to achieve these high levels of operation.

#### PRECAUTIONS AND LIMITATIONS

Asphalt remains relatively soft for up to one year after laying; until it has time to oxidise and harden (i.e. elasticity is reduced). It is recommended that the surface is not trafficked for at least 24 hours (longer in hot weather) following installation, when it is most susceptible to damage. When trafficked by vehicles, it is recommended that they are moving when the wheels are turned. If a vehicle is stationary when tyres are turned (particularly with modern power steering), the asphalt can be displaced and marked by stresses applied at that particular point. It is also recommended that (wherever possible) vehicles are parked in different positions to avoid marking the asphalt, and heavy vehicles, trailers, plant, machinery and ladders with small footprints are parked on wooden boards to disperse the loading. Fuel spillages should also be contained and cleaned up as soon as possible as these will compromise durability. Recommended procedure for removing diesel spillages is as follows:

- Stem the leak.
- If necessary, contain the spillage by deploying booms around the source and block any drains.
- Apply absorbent granules (e.g. cat litter) or sand to the spillage area.
- Sweep up the absorbent granules and dispose of in accordance with environmental regulations.
- Scrub the surface using a mild detergent. Any effluent resulting from the clean-up activity must not be washed into surface water drains as it is an offence under the Water Resources Act 1991.



#### QUANTITY REQUIRED

As a guide, please refer to the Material Calculator on our website ([www.breedongroup.com](http://www.breedongroup.com)).

#### AVAILABILITY

BREEDON Onecoat Utilities can be laid all year round due to its improved workability (depending on climatic conditions), and may be installed by Breedon or experienced Contractors.

**TO DISCUSS YOUR PROJECT REQUIREMENTS, AND FOR MORE INFORMATION ABOUT OUR PRODUCTS CONTACT:**

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